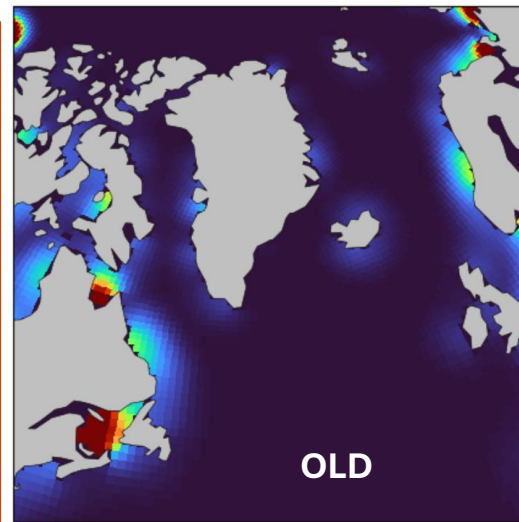


### OVERVIEW

- The Greenland FW forcing in ECCOV4 is underestimated by an order of magnitude
- This project aims at creating a more realistic field
- What happens with the temperature/salinity/currents/sea ice when the freshwater flux is increased?



Updated the runoff field with realistic FW forcing from Greenland ice sheet and spatial distribution of FW from icebergs



### PRODUCTS / RESSOURCES

**GEUS Bulletin** Geological Survey of Denmark and Greenland

DATA ARTICLE | SHORT

**A data set of monthly freshwater fluxes from the Greenland ice sheet's marine-terminating glaciers on a glacier-basin scale 2010-2020**

Nanna B. Karlsson\*, Kenneth D. Mankoff\*, Anne M. Solgaard\*, Sigrun How\*, Robert S. Fausto\*, Louise S. Sørensen\*

\*Geological Survey of Denmark and Greenland (GEUS), Copenhagen, Denmark; \*Autonomic Integra LLC, New York, USA; \*DTU Space - National Space Institute, Technical University of Denmark

Monthly data from 267 glacier outlets

Daily fields of FW from icebergs derived by altimetry

Doc. Tech. LOPS 2025-01

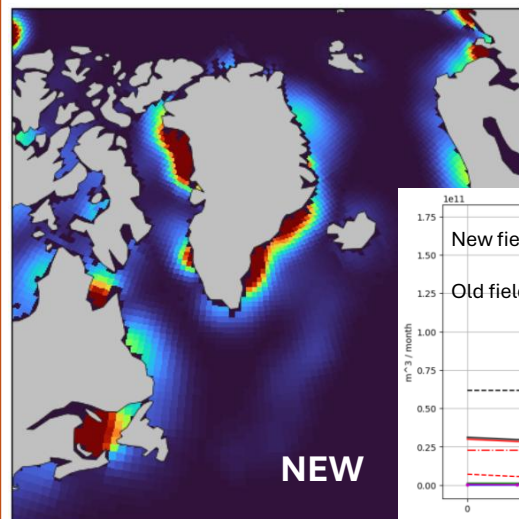
**The ALTBERG Antarctic and Arctic Fresh Water Flux data sets, v1.0**

J. Tonneau, J.F. Piab, D. Segala, F. Girard-Arthuis

Mean Volume of Ice

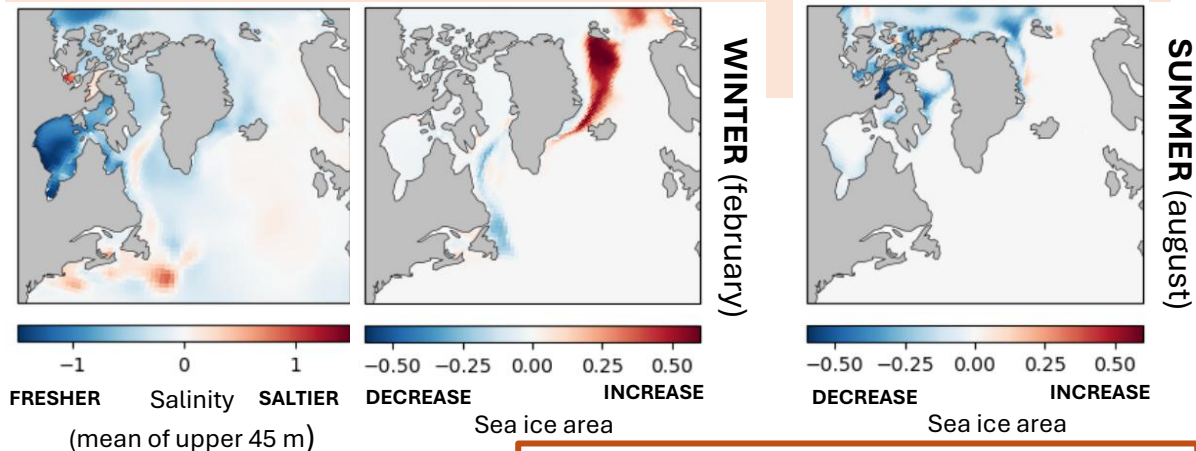
Mean FW flux

Ref.: Doc. Tech. LOPS 2025-01  
Version: 1.0  
Date: Feb 2025

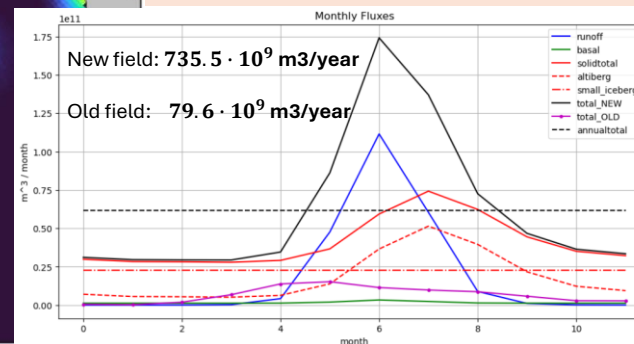


10 year (2003 – 2013) monthly average difference between ECCOV4r5 (old runoff) and ECCOV4r4 (new runoff), New minus old

The upper ocean is getting fresher both in winter and in summer. We see more sea ice in winter (in the nordic seas) and less sea ice in summer (north of Greenland).



The new FW field is still just a climatology. But data is there to create a timevarying field



### CONCLUSIONS

- The new FW field agrees with data from GEUS in terms of annual total flux
- Improvements in code needed especially in projecting the fields to ECCO grids and it could be updated to work on grids with higher resolution than LLC90
- Future works could implement a time-varying field